



Diascund Reservoir 2006

Diascund Reservoir is owned by the City of Newport News and borders within both James City County and New Kent County. The Virginia Department of Game and Inland Fisheries, with agreement from the City of Newport News and James City County, was authorized to build the public boat ramp, courtesy pier, and parking lot that are currently located off of 603 near the town of Lanexa. The reservoir is 1,110 acres in size and has a number of large creek arms. The reservoir has plenty of interesting contour and structure. Several small islands, numerous large points, and bridge crossings all add to the extreme variability of the topography. The use of outboard engines is prohibited on Diascund Reservoir. The use of trolling motors is permitted. Anglers might want to make sure that they have two fully charged batteries if they plan on making long trips toward the upper reaches of the creek arms.

The Virginia Department of Game and Inland Fisheries conducted an electrofishing survey of Diascund Reservoir on April 29, 2005. The reservoir was last sampled in May 2002. The 2005 sample was concentrated in 5 different regions of the reservoir to get a broad spectrum of the fish assemblage present. An 18-foot electrofishing boat equipped with a 16 HP Briggs & Stratton generator was used for the sampling runs. The AC electric current produced by the generator was run through a 680-volt Smith Root electrofishing box and converted to DC current. Six-wired anode droppers were used off bow-mounted booms to place the electric current into the water. The electric current temporarily stuns the fish to the surface to allow for fisheries staff to dip net the fish and place in the live well. The electrofishing box was able to draw and release 4 amps of electricity. The water temperatures varied slightly from 17.2 to 18.3°C. Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 4 foot depth range. Run 1 consisted of a 1,200 seconds of sampling along the eastern shore of the Barnes Swamp/Wahrani Swamp creek arm. Run 2 consisted of a 1,200 seconds of sampling along the western shore of the mid region, Wahrani Swamp creek arm. Run 3 consisted of a 1,600 seconds of sampling along the southern edge of the Beaverdam Creek arm from the 620-road crossing to a mid lake point. Run 4 consisted of 1,200 seconds of sampling from the 627-road crossing to the power line crossing. Run 5 consisted of 2,000 seconds of sampling the shoreline of upper Timber Swamp Creek. Run 1 and Run 3 were the same traditional sites that have been sampled in the past. The other 3 sites were newly selected. A total effort of 2 hours of electrofishing yielded the collection of 16 fish species. This report will concentrate primarily upon the seven fish species of largemouth bass, bluegill, black crappie, chain pickerel, bowfin, yellow perch, and redear sunfish.

Table 1. Summary of the April 29, 2005 electrofishing survey for the primary fish species of Diascund Reservoir.

Species	# Collected	Largest Length	Average Length
Largemouth Bass	83	20.9"	13.5"
Bluegill	198	7.7"	4.1"
Black Crappie	49	14"	8.5"
Chain Pickerel	24	23.1"	15.7"
Bowfin	10	28.8"	18.8"
Yellow Perch	32	9.7"	5"
Redear Sunfish	44	8.8"	7"

The largemouth bass population within Diascund Reservoir appears to be in decent shape and reasonably balanced. The overall size structure favors the presence of bass in the 13 to 18 inch range. A total of 83 largemouth bass were collected. The CPUE (Catch Per Unit of Effort) for largemouth bass was only 41.5/hr. This catch rate is lower than most waters within the region. Although the catch rate is not very impressive, it is still higher than the 2002 sample (CPUE 32.4 bass/hr). The average sized bass for runs 1 through 4 were very similar. Refer to table 1 for comparison. Run 5 produced the greatest average-sized bass of 14.6" in length. It also provided the second highest CPUE of 50.4 bass/hr. The size distribution of the collected bass can be seen on the enclosed length frequency graph.

Table 1. Largemouth bass abundance values for each sampling run along with the average size, minimum and maximum lengths, and CPUE.

Run #	1	2	3	4	5
# of bass	10	10	24	11	28
Average size	13.1"	13.6"	12.6"	13"	14.6"
Max size	17.3"	17.8"	18.3"	16.9"	20.9"
CPUE	30	30	54	33	50.4

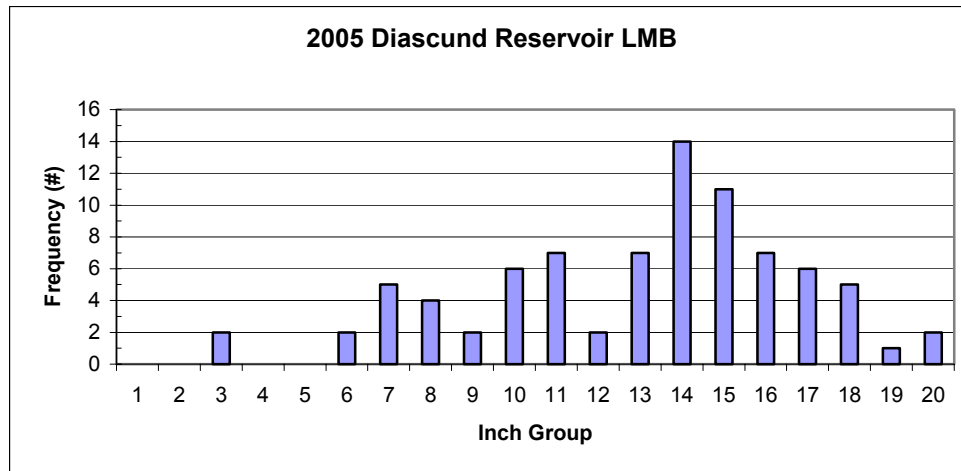


Figure 1. Length frequency distribution of largemouth bass collected from Diascund Reservoir on April 29, 2005. (N = 83, CPUE = 41.5)

The distribution showed a high proportion of bass in the 13 to 18.5 inch size range (50 of 83 bass, 60%). These bass will provide a great deal of the fishing excitement. No otoliths were taken as all bass were released. The following discussion of year-class strength is based upon age estimates and no exact data. The collection of the two small bass (3.8 and 3.9 inches in length) shows evidence that the bass are not growing all that quickly during their first year of life. Those bass are members of the 2004-year class, being spawned in the April to May time frame. These fish could be from a late spawn or they could represent the recruitment from a really poor year class. The 6 to 9 inch size range most likely represents the 2003-year class. The 10 to 12 inch size range most likely represents the 2002-year class. The combination of all 5 runs yielded an average bass length of 13.5 inches. The two largest bass were collected in Timber Swamp Creek. The longest bass measured 20.9" and weighed only 4.44 pounds. The other bass measured 20.4" and weighed 4.48 pounds. Our sampling efforts are just a representative picture of the fish community collected along the shoreline and various habitat structures on April 29, 2005. The reservoir has been known to produce bass up to 10 pounds. Larger bass may have been able to escape from the electrofishing boat or may just be living in other areas of the reservoir that were not sampled.

With largemouth bass being the most popular game fish in this country, it has been considered that a "preferred" bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of bass in the population over 8 inches (stock size) that are also at least 12 inches (quality-sized). The sample showed an extremely high PSD value of 76, which is a direct reflection of the 57 quality-sized bass. The sample had a total of 75 bass that were stock size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40 – 70 range. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of bass in the population over 8 inches that are also at least 15 inches. The high RSD-P value of 47 is a direct reflection of the 35 preferred fish being collected. The 2005 PSD and RSD-P values are close to the 2003 values (PSD = 80, RSD-P = 41).

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. The higher the value, the better the condition of the fish in terms of overall body mass. The overall relative weight value was 93. The relative weight values for stock, quality, and preferred bass (>8", >12", >15", >20") were 93, 94, 93, and 88 respectively. These relative weight values show that the fish are experiencing slight difficulties in successfully finding enough prey items to forage upon. Body condition factors like relative weight are hard to explain. I would have expected the bass to have higher relative weight values due to the decent number of small bluegill present. The two memorable bass showed the lowest relative weight value. These bass may have been early spawners and lost weight from the stress and energy exerted during spawning and caring for eggs and fry.

The sample revealed the bluegill fishery to be dominated by fish less than 6 inches in length. Electrofishing effort was able to collect 198 bluegills. This CPUE of 99 bluegills/hr shows a fair population exists. The catch rate is much lower than the 2003 sample (588 bluegills/hr). This difference is most likely due to the variation of water temperature. The 2002 samples were conducted on May 10th and 16th. These sampling trips were much later in the season with water temperatures up to 24.3°C. The abundance of bluegill and low numbers of bass could be attributed to the warmer water temperatures. The size distribution can be seen on the attached length frequency graph. The average sized bluegill was only 4.1 inches in length. The PSD for bluegill is the proportion of bluegill over 8 cm (stock size) that are also at least 15 cm (quality size). Due to the number of smaller fish, the bluegill PSD was only 20. The collection consisted of 29 quality-sized bluegills in the 6 to 7.7-inch range. The PSD value is at the low end of the 20 to 40 range that would represent a balanced fishery. The total of 145 stock-sized bluegills lowered the PSD value. No bluegills greater than 7.7 inches were collected.

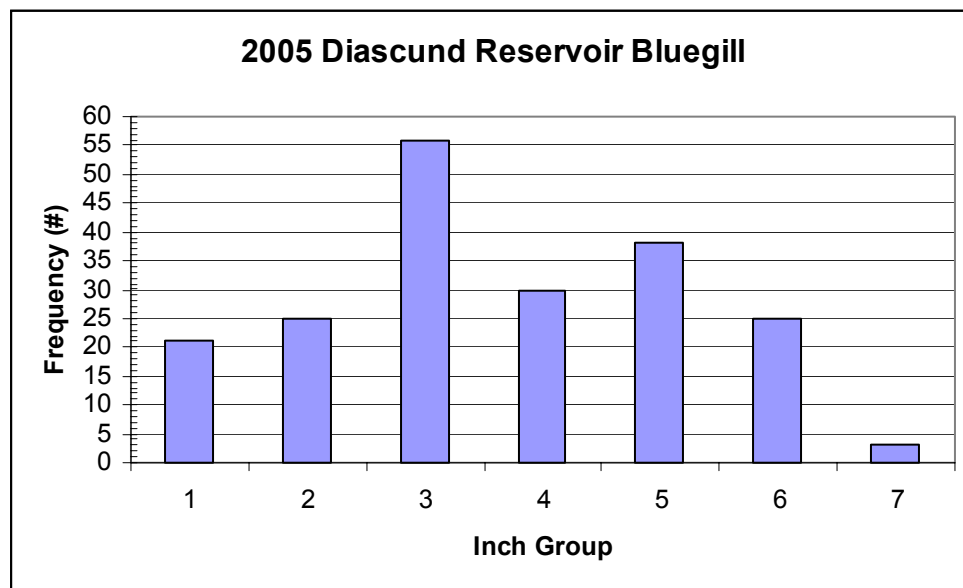


Figure 2. Length frequency distribution of bluegill collected from Diascund Reservoir on April 29, 2005. (N = 198, CPUE = 99/hr)

The black crappie population appears to be in decent shape even though a fair number of the fish collected were below 9 inches in length. The sample was able to collect 49 black crappies for a CPUE of 24.5/hr. This sample is less than the 2002 CPUE of 40.2/hr. The size distribution of the 2005 sample can be seen on the length frequency histogram. The 2005 sample collected 30 crappies in the 5 to 8-inch range and one 4-inch crappie. The remaining 18 crappies were in the 9 to 14-inch range. The largest black crappie measured 14 inches and weighed 1.35 pounds. The majority of the black crappies were collected from the shallow areas of Timber Swamp Creek. Taking into account the number of medium-sized black crappies, the average size was 8.5 inches.

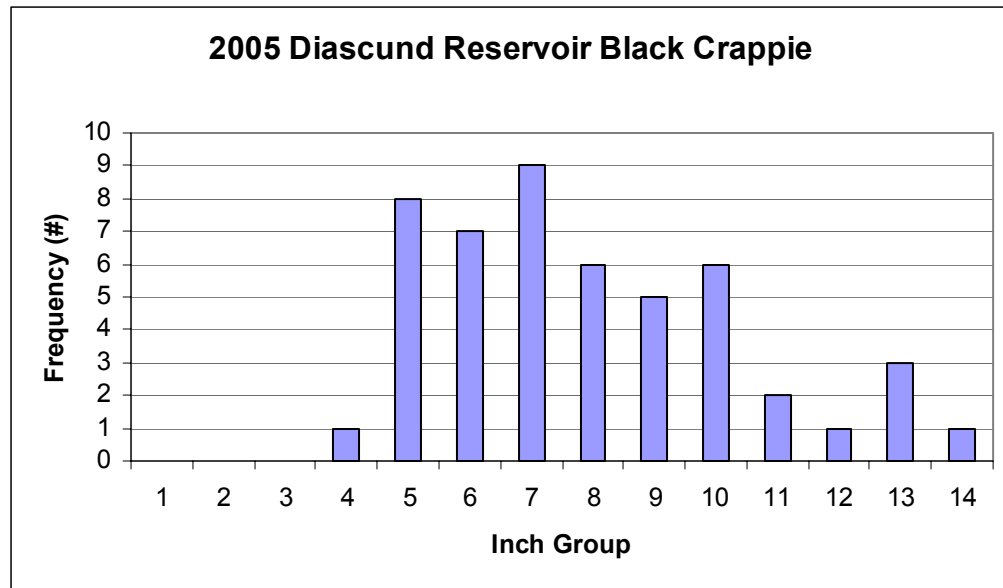


Figure 3. Length frequency distribution of black crappies collected from Diascund Reservoir on April 29, 2005. (N = 49, CPUE = 24.5/hr)

The chain pickerel population offers some diversity to the fishery and will provide some fishing action when the bass are not cooperating. The sample revealed a limited number of chain pickerel. A total of only 24 chain pickerel were collected for a CPUE of 12/hr. This catch rate is slightly higher than the 2002 sample (CPUE = 11.1/hr). The 2005 size distribution ranged from 8.8 to 23.1 inches. The majority of the chain pickerel were in the 13 to 17-inch range. The average-sized chain pickerel measured 15.7 inches. The largest chain pickerel measured 23.1 inches and weighed 2.75 pounds.

The bowfin population is similar to the chain pickerel population in that low numbers were collected. A total of only 10 bowfins were collected for a CPUE of 5/hr. The 2002 sample also revealed low numbers of bowfin with only 7 collected for a CPUE of 3.4/hr. The 2005 sample contained 6 bowfins less than 16 inches and 4 bowfins greater than 24 inches. The largest bowfin measured 28.8 inches. Taking into account the two size groups, the average sized bowfin measured 18.8 inches. The possibility exists for anglers to catch a bowfin while fishing Diascund Reservoir. There is also chance that they might hook into one of the larger bowfin in the 10 to 12 pound range.

A total of only 32 yellow perch were collected. The CPUE of 16/hr is not very impressive. The size distribution consisted primarily of perch in the 3.5 to 6 inch range. The largest yellow perch measured 9.7 inches and two other 8-inch perch were collected. The yellow perch were more abundant in the 2002 sample (N = 133, CPUE = 64.3/hr). The increased water temperature in the 2002 sample may have triggered increased feeding activity in the shallows near the shoreline.

The redear sunfish population appears to be in decent shape. A total of 44 redear sunfish were collected for a CPUE of 22/hr. This catch rate is much lower than the 2002 sample that collected 180 redear sunfish for a CPUE of 87.1/hr. The warmer water must have triggered the sunfish into an active pre-spawn pattern in 2002. The 2005 size distribution looks decent with the majority of the sample consisting of 6 to 9-inch fish. The average size redear sunfish measured an impressive 7 inches.

The remaining 9 species of fish were collected in low abundance. These fish provide some diversity to the fishery and the possibility of exciting an angler from time to time. The table below is a listing of those fish species.

Table 3. Listing of the remaining species with their abundance in the sample, minimum and maximum lengths, and average size.

Species	# Collected	Min Size (in.)	Max Size (in.)	Average Size (in.)
Brown Bullhead	1		11.8	11.8
Yellow Bullhead	1		13.5	13.5
Common Carp	11*			
Creek Chubsucker	10	4.6	11.4	7.6
American Eel	5	12.6	21.6	15.2
Longnose Gar	1		13.9	13.9
Gizzard Shad	4	12	13.8	12.7
Golden Shiner	4	3.6	4.4	4.1
Warmouth	1		5.6	5.6

* A count of common carp with no length measurements taken

The sampling of Diascund Reservoir showed a diverse fishery consisting of 16 species of fish. The primary game fish species of largemouth bass, bluegill and black crappie were the most abundant in our sample. Additional fish species of chain pickerel, bowfin, yellow perch and redear sunfish are present in lower abundance. The reservoir provides some decent bass fishing. Even though our sample did not show it, large bass have been caught from the reservoir. A total of 7 citation-sized bass were reported in 2005. The electrofishing sample revealed a size structure consisting of numerous bass in the 13 to 18.5 inch range. Anglers are encouraged to try their luck along the banks of Timber Swamp Creek. Our electrofishing results showed this area to be rather productive for decent-sized bass. The bluegill and yellow perch fishery is primarily based on small fish less than 6 inches in length. The electrofishing of black crappies was spotty. The schooling nature of black crappies makes for a difficult time of finding them. They tend to school in deep water

more than bass and bluegill. A few decent black crappie up to 14 inches were collected along with a good number of crappies over 10 inches. Future plans for spring trap netting of Diascund Reservoir will provide more insight into the strength of the black crappie population. The reservoir provides some action for anglers that enjoy catching chain pickerel and bowfin. A few bowfin in the 8 to 10 pound range were collected. The reservoir produces some nice redear sunfish in the 6 to 8.8 inch range. The reservoir produced a variety of citations in 2005 with 7 black crappie, 3 chain pickerel, 3 longnose gar, 1 bowfin and 1 yellow perch reported. Diascund Reservoir provides an assortment of fishing opportunities. It just depends upon which species of fish you plan to target.